



Bristol-Myers Squibb

**9/6 DRAFT: FOR REVIEW
NOT FOR DISTRIBUTION OR PUBLIC USE**

Public Meeting – Ciudad Cristiana

September 20, 2016

Agenda / Speakers

- **Welcome**
 - Carmen Judith Velez, Master of Ceremonies
- **General Manager's Message**
 - Robin Edwards, Vice President & General Manager – BMS Humacao
- **Project Presentation**
 - Alvin Crespo, Environmental, Health and Safety Director – BMS Humacao
 - Background
 - Sampling data
 - Next steps
- **Questions & Answers**



Investigation Outcome

- BMS completed sampling
- Information we have indicates that there is not cause for concern
- This information indicates that the compounds tested will not result in adverse health consequences



Background information



Site Overview / Introduction

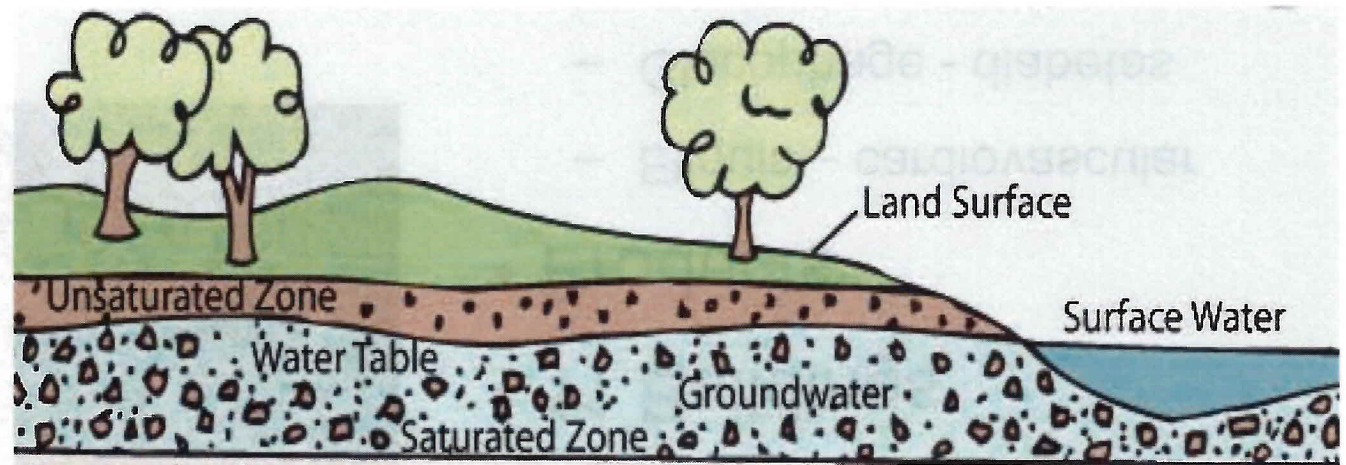


- 260 employees
- Oral Solid Dosage site
- 11 Buildings
- Products
 - Eliquis – cardiovascular
 - Glucophage - diabetes
 - Glucovance - diabetes
 - Sustiva - HIV



What is Groundwater?

- **Groundwater** is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers.
- It is found 5-12 feet below the surface at/near BMS Humacao.



Why Test Groundwater?

- Groundwater contamination can be an issue in three different ways:
 - Breathing it
 - Touching it
 - Drinking it



Background Information

- Bristol-Myers Squibb Manufacturing Company (BMSMC) is working with the US Environmental Protection Agency (EPA) to collect additional information on the condition of groundwater on and near our manufacturing facility.
- BMS has been performing environmental assessments and remedial actions on-site for a number of years. Recent samples collected on-site at the property boundary indicated the need for additional investigation of groundwater off-site.
 - Those samples showed the presence of the following chemicals: 1,4 dioxane, naphthalene, methyl tert-butyl ether (MTBE), benzene, petroleum hydrocarbons and tert-amyl alcohol, at levels that that require that we expand our investigation off-site
 - These are chemicals that are commonly used in the pharmaceutical industry



Background Information (continued)

- BMS no longer uses these compounds in manufacturing operations at the Humacao facility, but they are in the groundwater due to their historic use
- Preliminary sampling results on the BMS property suggested that any materials that may have migrated off-site was unlikely to present unacceptable risks to the public, however we pursued testing off site out of an abundance of caution
- BMS is fully committed to thoroughly investigate off-site conditions and take whatever steps are necessary and appropriate to remedy any situation which may be associated with groundwater impacts related to our former operations
- In this meeting, we are looking to convey the results from our investigation over this summer (June – August 2016)

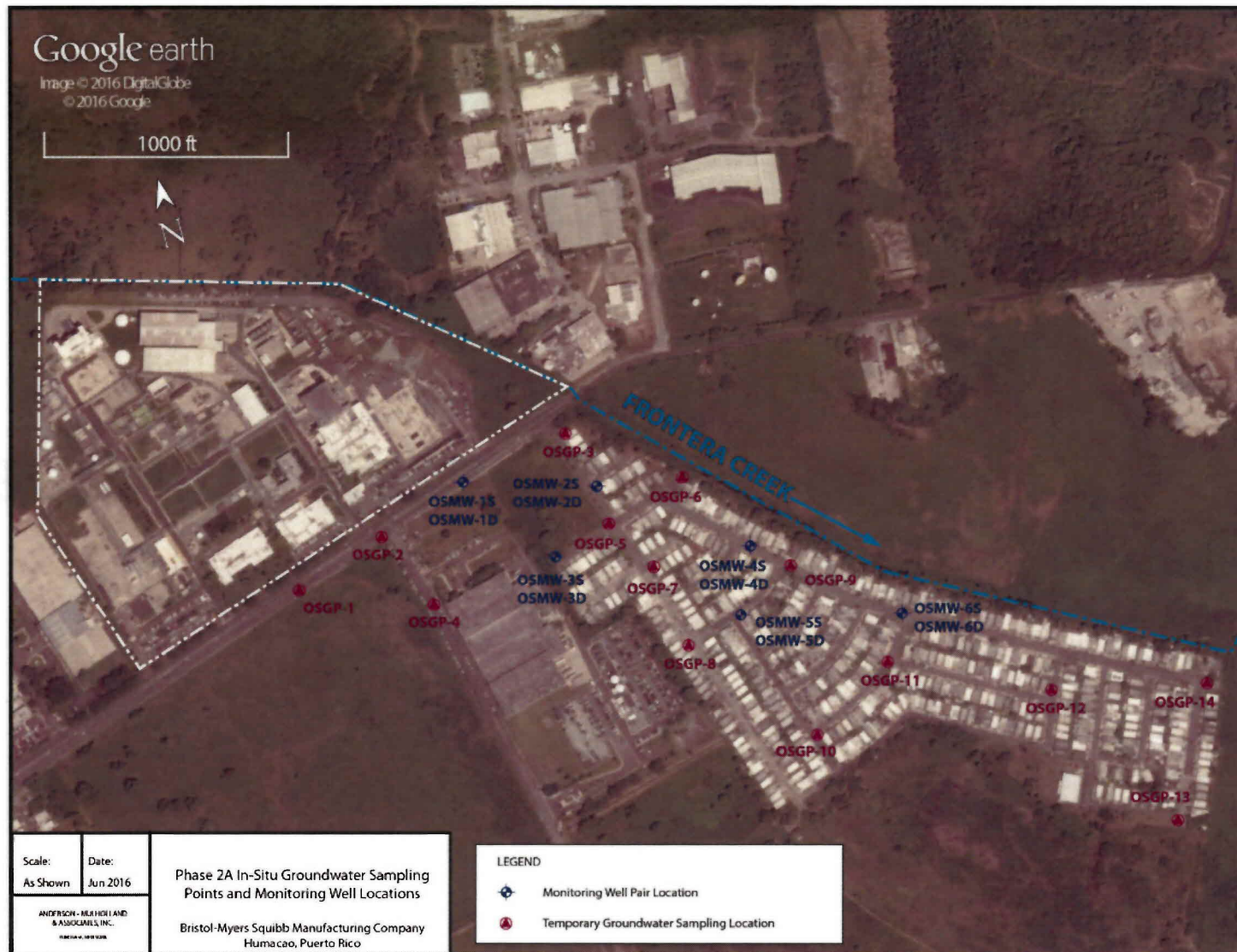


Environmental Investigation

- BMS has been engaged with the EPA in an extensive investigation of groundwater contamination on its own property
- Collected groundwater samples in Ciudad Christiana neighborhood
 - June / August 2016
 - 6 monitoring well pairs
 - 14 temporary sampling points (*monitoring locations shown on easel*)
- Laboratory testing (July – September 2016)
- Communication of results (*summary table available*)
- Full oversight and communication with USEPA & EQB



Location of monitoring locations



Sampling data



EPA Screening Levels

	1,4-Dioxane	Benzene	Methyl Tert Butyl Ether	Naphthalene	Tert-Amyl Alcohol	C11-C22 Aromatics
MCL	NA	5.0	NA	NA	NA	NA
Tapwater RSL	0.46	0.46	14	0.17	6.3	5.5
Residential VI Target Groundwater SL	2200	1.3	370	3.2	4100	NA
Commercial VI Target Groundwater SL	9600	5.6	1600	14	17000	NA
Dermal Exposure SL	230					

NOTE: Dermal exposure SL to be included if all of them are available for the substances investigated



Preliminary Results

PRESENT THE RESULTS HERE



What Do the Results Mean?

- EPA Action Levels (groundwater, 1-4-Dioxane)

0.46 ug/L - drinking water

2,200 ug/L - vapor intrusion (VI) considerations

230 ug/L - extended skin contact

- Considerations

- Initial results favorable

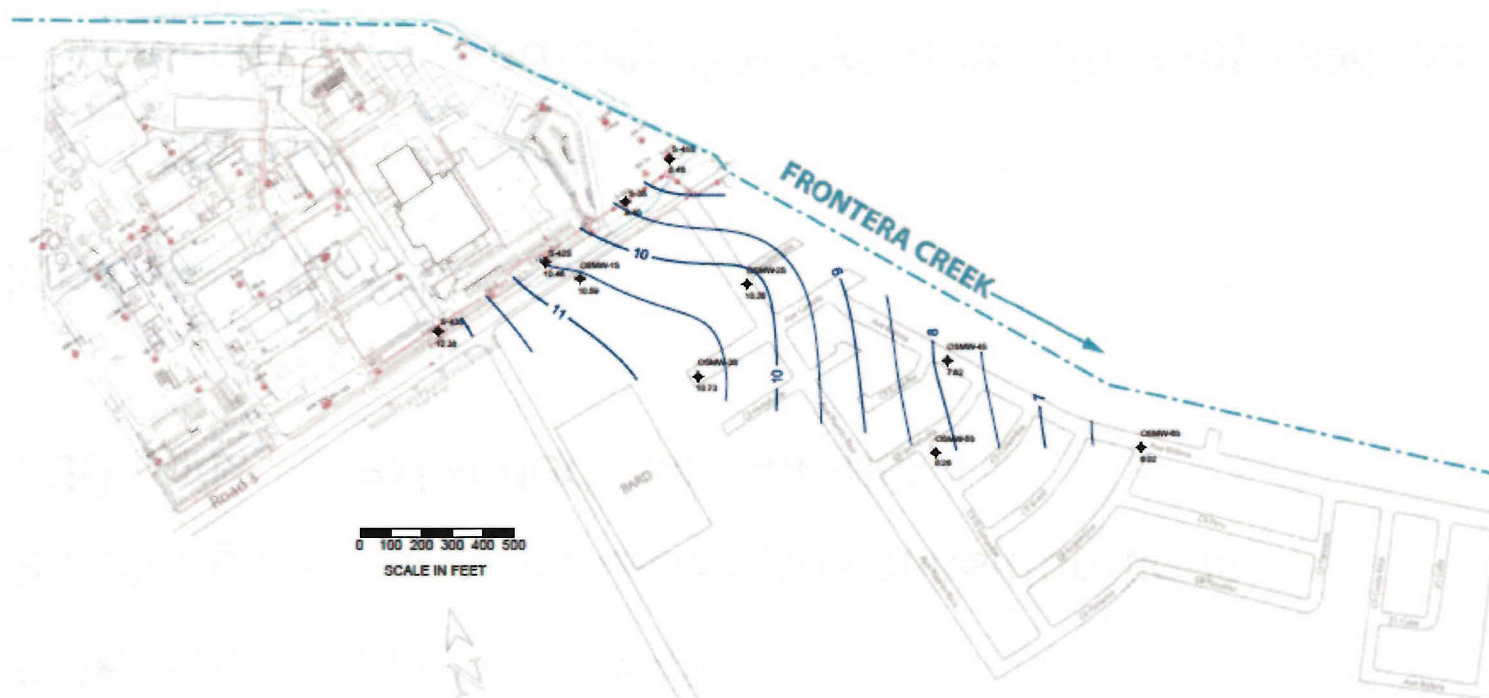
- Municipal water supply (fire hydrants; drive-by well survey)

- Neighborhood VI / dermal exposure (shallow groundwater)



How Does Groundwater Flow ?

DRAFT Groundwater Elevations in Shallow Monitoring Wells
(Measured July 27, 2016)



Groundwater flows towards Frontera Creek



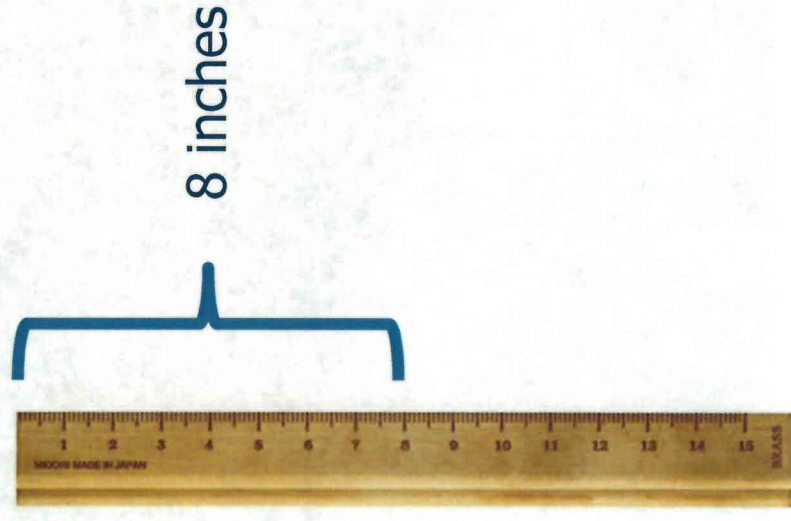
Next steps

Upcoming Activities

- Additional testing along route 3
 - Confirm initial results
- Resampling neighborhood wells
 - Quarterly testing (“typical” sampling crew picture)
- Sampling in / near Frontera Creek
- Continued communication of results



Final monitoring well size: 8-inches in diameter



Typical Field Sampling Crew



Immediate Actions and Contact Information

- For additional information, please contact:
 - **Alvin Crespo**
BMSMC Environmental, Health and Safety Director
(787) 656-4364
 - **Socorro Martínez**
US EPA Geologist
(787) 977-5886



